

**ABSTRACT**

A method of controlling SO<sub>3</sub> flue gas concentration in a combustion process utilizing a SCR using a sulfurous fuel, the method steps including: providing a combustion system with low NOx burners and SCR; partially combusting the fuel in a first stage to create a 5 reducing environment; maintaining the reducing environment for a sufficient time period such that SO<sub>3</sub> is reduced to SO<sub>2</sub> to achieve a desirable level of SO<sub>3</sub>; combusting the remainder of the fuel and combustion intermediates in a second stage with oxidizing environment; reducing the remaining NOx with the SCR; thereby reducing emissions NOx.